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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,235	01/16/2002	Wai Kuen Cheung	040009-000100US	9590

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EXAMINER

COLON SANTANA, EDUARDO

ART UNIT PAPER NUMBER

2837

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,235

Applicant(s)

CHEUNG, WAI KUEN

Examiner

Eduardo Colon-Santana

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2003 and 22 March 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12-15 and 17-28 is/are rejected.
- 7) ☒ Claim(s) 8-11 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/29/2003.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's amendments filed on 9/19/2003 and 3/22/2004 have been received and entered in the case.
2. Applicant's arguments with respect to claims 1-7, 12-15 and 17-26 have been fully considered but they are not persuasive.
3. The replacement sheets of drawings were received on 3/12/2004. These sheets are acceptable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-7, 13-15, 17 and 19-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Thompson et al. U.S. Patent No. 6,479,958.

Referring to claims 1 and 13, Thompson discloses an anti-kickback and breakthrough torque control for power tool (see figure 2 and respective portions of the specification). Thompson further describes in figure 2, a controller (#30), a motor (#16), which draws a current from a power supply (#32) to induce a forward motion in response to a load. Thompson additionally describes the controller adapting a pulse

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mode operation at a predetermine cycle frequency, wherein a pulse current "on and off" is engaged in sight of an exceeded motor parameter for a limit time to allow the motor to response to the load. (See Col. 4, lines 16-38 and Col. 5, lines 2-14 and figure 7).

As to claim 20, the method steps are inherent in the product structure mention in claims 1 and 13. Discussion is omitted.

Referring to claims 2, 14 and 21, Thompson addresses all the limitations of the base claim they depend on. Thompson further discloses that a sufficient period is maintained with the current pulses until normal operation in the forward motion is achieved (see Abstract and Col. 2, lines 17-67 and Col. 4, line 29-38).

As to claims 3, 15 and 22, Thompson addresses above that a sufficient period is maintained with the current pulses "ON and OFF" to allow the motor to resume its normal operation.

Referring to claims 4 and 23, Thompson discloses in figures 7 and 9, graphs of motor current as a function of time, in which he illustrates one (1) current pulse per six (6) cycle frequency range, which in terms fulfills the range of 0.1 second to 13 seconds claimed.

As to claims 5, 17, 19 and 26, Thompson addresses the limitations of claims 1, 13 and 20. Thompson further discloses that although the invention was discloses for an AC-powered drill application, the invention is equally suitable to a battery powered tool (limited DC source). See Col. 10, lines 1-3.

Referring to claims 6 and 24, Thompson addresses the limitations of the independent claims and further discloses the controller (#30)

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being adapted to pulse the current "on and off" in a predetermined time (see Abstract).

As to claims 7 and 25, Thompson addresses the limitations of the base claim and additionally discloses the controller (#30) being adapted to pulse the current "on and off" until the trigger switch (#24) is manually re-set to cut off the power supply to the motor (see Col. 4, lines 51-65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. in view of Glasgow et al. U.S.

Patent No. 6,392,373.

As to claims 12 and 18, Thompson discloses an anti-kickback and breakthrough torque control for power tool. Thompson further describes in figure 2, a controller (#30), a motor (#16), which draws a current from a power supply (#32) to induce a forward motion in response to a load. However, Thompson does not mention the motor having induce reverse motion when a motor parameter exceeds a predetermine value. On the other hand, Glasgow et al. discloses an automatic reverse motor controller for a power tool (see figure 2 and respective portion of

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the specification). Glasgow further describes a reverse current flow to the commutator for a predetermine amount of time if the voltage from the trigger switch is equal to or greater than a predetermine value (see Abstract and Col. 2, lines 37-39). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a motor controller with a reverse motion signal after the release of the forward motion as taught by Glasgow within the teaching of Thompson for the purpose/advantages of controlling the operation of the tool, so as to relieve it from obstruction or a binding condition, which could lead the motor to stall.

3. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. U.S. Patent No. 6,479,958.

Referring to claims 27 and 28, Thompson discloses in figure 4 a pulse diagram and in figures 7 and 9 graphs of motor current as a function of time, in which he illustrates one (1) current pulse per six (6) cycle frequency range, which in terms fulfills the range of 0.1 second to 13 seconds claimed. Thompson discloses the claimed invention except for predetermined cycle frequency ranges from .03 second to 1 second. It would have been obvious to one having ordinary skill in the art at the time the invention was made to narrow the range of the cycle frequency to .03 to 1 second relying solely on the power supply, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Aller*, 105 USPQ 233.

Allowable Subject Matter

4. Claims 8 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments have been fully considered but they are not persuasive.

It is believed that the references read on the present claims.

In view of the arguments of claims 1, 13 and 20 that Thompson does not teach or suggest how to determine the actual time duration of the "on" time or the "off" time is not persuasive, for the fact that Thompson clearly discloses in Col. 4, lines 17 to 38 "that in operation, the trigger switch supplies the trigger signal to micro-controller 30 that varies in proportion to the switch setting and furthermore monitors the average current signal and reverts automatically to normal motor operation". One ordinary skill in the art would have recognized that the control system of Thompson inherently has to determine the "on" and "off" time by way of a command in the micro-controller so that the system would work as stated in Col. 4, lines 17 to 38.

In response to applicant's argument that the references fail to teach or suggest certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., how to determine the actual time duration) are not recited in the rejected

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claims 1, 13 and 20. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The arguments of claims 2, 6, 14, 21 and 24 are not persuasive, as describe above in the rejection, Thompson discloses that a sufficient period is maintained with the current pulses until normal operation in the forward motion is achieved (see Abstract and Col. 2, lines 17-67 and Col. 4, line 29-38).

As to the arguments of claims 3, 15 and 22, Thompson addresses above that a sufficient period is maintained with the current pulses "ON and OFF" to allow the motor to resume its normal operation.

In response to applicant's arguments of claims 4 and 23 that there is no suggestion or teaching of the claimed range on Thompson is not persuasive, for the reasons that the subject matter in applicant's claim does not limit or restricts the use of AC line cycles to derive a cycle frequency range used to reject the claim.

As to the arguments of claims 12 and 18, the prior rejection still stands. One of ordinary skill in the art would have recognized the teachings of Glasgow within the structure of Thompson as explained above in the office action.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

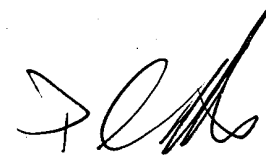
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo Colon-Santana whose telephone number is (571) 272-2060. The examiner can normally be reached on Monday thru Thursday 6:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor can be reached on (571) 272-2800 X.37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ECS
May 27, 2004



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